The effects of general radiation are clinically no less definite, but many medical men refuse to credit this. Steenbock and Black, of the University of Wisconsin, have shown that ultra-violet rays can reactivate cod-liver oil the antirachitic power of which has been destroyed by heat; and can also confer this power upon other fats, including that present in the human skin. This "explains" their action in rickets in terms of cod-liver oil. Again, Leonard Hill and his co-workers have proved that an erythema dose over about one-quarter of the body surface raises the bactericidal power of the blood. Here is a possible explanation, in bacteriological terms—which, by virtue of thirty years' use, have become familiar and respectable—of the action of ultra-violet rays in tuberculosis. But when it is stated, for example, that great benefit may result from their use in disseminated sclerosis, in pernicious anaemia, and in Hodgkin's disease, there is no obvious link with familiar facts.* Yet it is generally believed that these disorders are the result of toxins, and that these toxins are probably of microbial origin. The bodily resistance to known toxins is raised by ultra-violet rays, and this stimulation is effective against such widely different organisms as the tubercle bacillus and the cocci of suppuration. Surely, then, it is not very difficult to admit that it may be effective against other, and at present unknown, organisms.

It is often said that light treatment is useless, and even dangerous, in phthisis, but by cautious dosage—erythema should be avoided—and a careful selection of cases, much

* Since the delivery of this address good results have been obtained in the treatment of the inco-ordination and depression which follow "sleepy sickness."

good may be done. The patients must not be very ill, nor must they be of the well known type which offers little resistance to the spread of the disease. The kind of patient who would in any case struggle on for some years, doing a certain amount of work, is the one who will derive definite benefit. His working life will be prolonged, and his outlook on life altered for the better.

If we bear in mind steadily that for the most part light acts as a stimulus to natural power of defence, we shall understand its limitations. The moribund patient cannot respond, and the patient with high temperature is in no state to answer further calls. Ill health of any kind due to a concealed septic focus cannot be permanently benefited. "Rheumatic" or "neuritic" pains caused by an abscess at the apex of a tooth are examples in point. When, however, we suspect a toxin, but cannot locate it, the use of light is justified in so far as it places the patient in the best possible condition to resist the hypothetical poison.

Finally, it should be noted that ultra-violet rays form but a small part of the total of wave-lengths in nature; and while their value is great, even if used alone, it is vastly enhanced by a combination with other radiations, notably x rays. Their addition is an essential factor in the cure of some skin troubles; and, on the other hand, x rays may be employed more freely in deep-seated cancer if ultra-violet rays are used to prevent injurious effects on the blood.

The actual carrying out of light treatment may well be delegated to competent lay operators, acting upon definite prescriptions. But the indiscriminate use—or, rather, abuse—by unqualified persons of ultra-violet rays as a cure-all is likely to bring discredit upon the treatment.

SPORADIC BACILLARY DYSENTERY IN ENGLAND.

BY

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THE following brief account of two recent outbreaks of dysentery or pseudo-dysentery, chiefly affecting children, would seem worthy of record, especially in view of the pathological and bacteriological findings. The sudden and limited outbreak, confined in each case to one household, seemed to point to some kind of food poisoning, and it was with the view of ascertaining the character of the toxic agent that a complete pathological and bacteriological examination was made in the first outbreak described.

The first outbreak involved four children from one household in Warrington. The first child attacked, S. D., aged 1 year and 9 months, became ill on February 27th, 1926, with sickness and drowsiness; then severe diarrhoea set in. Three days afterwards (on March 2nd) A. D., aged 6 years, and G. D., aged 4 years, were taken ill with sickness and diarrhoea. All three were noted to be drowsy at the commencement of the illness. Dr. David Meikle, their medical attendant, stated: "All had symptoms of acute gastro-enteritis, vomiting, diarrhoea, green stools loaded with mucus, no blood or rise of temperature, rapid but regular pulse. The two elder children were semi-conscious, but the youngest was quite conscious. The eldest had had an epileptiform seizure in the night." R. B., aged 2 years and 9 months, was taken ill on March 4th with vomiting and diarrhoea. Drowsiness was not noted in this case.

All the children were removed to Whitecross Hospital, Warrington, on March 4th. S. D. died on March 8th, and R. B. on March 9th, and *post-mortem* examinations were ordered by the coroner. A. D. and G. D. survived.

Post-mortem Examinations.

S. D.—The body was that of a well nourished male child. *Post-mortem* lividity was well marked over the back and buttocks. Rigor mortis was present. The heart and lungs were normal; the left ventricle contained a large amount of dark fluid blood, and there was a large dark clot in the right auricle. The liver, spleen, kidneys, and pancreas were normal. The stomach, which was practically empty, was removed between ligatures for further examination. About the middle of the small intestine signs of congestion appeared, and continued to its junction with the large intestine, which was very congested, showing haemorrhagic patches of inflammation studding the large intestine almost throughout its whole length.

R. B.—The body was that of a well nourished male child. The body was warm, and rigor mortis had not yet set in. *Post-mortem*

lividity was present in slight degree. The heart and lungs were normal. There was a small amount of dark fluid blood in the left ventricle, and a slight amount of *post-mortem* clot in the right ventricle and auricle. The stomach was removed between ligatures unopened for further investigation. The large intestine was also removed between ligatures. The lymph glands in the mesentery of the large intestine presented a remarkable appearance. There was a continuous row of enlarged lymph glands close to the intestine throughout the whole of its length. The other glands in the mesentery were also enlarged. The small intestines contained dark coloured faecal matter, and the ileum was much congested, and contained dark fluid blood. The liver, spleen, and kidneys seemed normal. The brain vessels were congested to a moderate degree with dark fluid blood, but were otherwise normal.

As food poisoning was suspected, the stomachs, intestines, and pieces of the kidneys, liver, and spleen were sent to the pathological laboratory of the Ministry of Health, packed in 30 per cent. glycerin. The pathologist's report, dated March 17th, 1926, was received from Dr. A. W. MacFadden. It was as follows:

"None of the specific food poisoning organisms or dysentery bacilli could be found in the tissues from the two cases. The circumstances point, I think, to an acute infection of the gastro-intestinal tract, and I should suspect an infection of *B. aertrycke*. It would be useful to test the serums of the surviving children against this organism and against the Morgan's bacillus, which I obtained from small intestine and liver of S. D."

Samples of blood from the surviving children were requested in order to test the serums for agglutinating properties. A blood sample from A. D. was sent, and the report was as follows:

"The blood serum from A. D. shows no trace of agglutinin for the *aertrycke* group of bacteria—that is, there is no evidence that the outbreak was one of 'food poisoning.' But the blood serum agglutinates the *B. dysenteriae* 'Y,' which indicates that the condition was almost certainly bacillary dysentery."

A good sample of blood could not be obtained from the other surviving child, G. D., but blister fluid resulting from emplastrum cantharidis was sent. This blister fluid gave no agglutination with *B. dysenteriae*. It may be that the absorption of cantharidin in the blister fluid affected any agglutinating properties that it possessed.

A careful investigation of the food eaten by the affected children was made by Chief Inspector Flood. Their meals consisted of toast and tea for breakfast, chip potatoes and cakes at midday, and eggs boiled and made into sandwiches for tea. The mother stated that the boy A. D. told her that the children were playing in the ash-bins on the morning of February 27th, and that S. D. was seen eating

orange peel picked from the bins. No tinned salmon, meat, or milk, or prepared foods of any kind had recently been used in the house. No other persons in the household or other children in the neighbourhood had been ill in a similar manner.

The other outbreak occurred at Antrobus, Cheshire, and was reported to one of us (J. S. M.) by Dr. Love of Great Budworth.

A boy, aged 4 years, was taken ill on December 1st, 1925, with vomiting and diarrhoea, temperature 102°. There was a little blood in one of the motions. Two days later the temperature became normal, and the child seemed better. On Monday, December 6th, diarrhoea recurred, and the temperature rose to 100°, with pain in the left side of the abdomen. At 2 a.m. on December 7th he had acute pain in the left side of the abdomen, with great distension. He was sent to a Manchester nursing home for operation, but died before any operation was performed. A sister, aged 2½ years, was taken ill on December 4th with diarrhoea and vomiting; blood and mucus were present in the stools. Diarrhoea continued until December 9th. The child recovered. A maid and visitor in the house also had diarrhoea for a couple of days. Mrs. C., aged 35, was taken ill on December 13th with frequent diarrhoea—blood, mucus, and shreds in the stools. A specimen of this was sent to the Runcorn Research Laboratory in a sterile bottle, and Dr. H. A. Mitchell reported as follows:

"Cultivations made from this specimen have yielded cultures of (1) *B. coli communis*, (2) a Gram-negative non-motile bacillus producing a turbidity in broth. It causes acid production in glucose, mannite, and maltose, but has no effect on saccharose, lactose, dulcitate, and raffinose, nor on litmus milk or gelatin. It failed to form indol, and gave only slight agglutination with specific Flexner 'Y' serum. Classification, *Bacillus paratyphosus* closely resembling the Flexner 'Y' type as described by Park and Williams."

A culture of this organism was sent to the Ministry of Health laboratory, and the report was as follows:

"The culture gives the fermentation reactions of the Flexner group of the *B. dysenteriae*, but fails to form indol, and gives only insignificant traces of agglutination or none with the specific serums of all the types of the Flexner group. It is not one of the standard dysentery bacilli, but may possibly be pathogenic."

A sample of blood was taken from Mrs. C. to test its agglutinating properties. This sample proved insufficient, and the patient refused to allow another sample to be taken.

The cases in this household were at first thought to be due to food poisoning, but nothing could be discovered likely to produce the condition. Milk and water were examined, and the well, formerly of good repute, which supplied the household was found to contain *Bacillus coli* in 1 c.cm. Other users of this water were not affected. All were warned to boil the water after the contamination was revealed. These cases, together with an account of an outbreak published by one of us (J. S. M.) in 1921 (*Lancet*, April 16th, p. 802), show that small localized and virulent outbreaks of colitis occur in this country, especially affecting children, and evidently have some etiological relationship to a bacillus of the dysenteric group of the Flexner "Y" type.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE OPERATION OF TONSILLECTOMY.

I was interested to read in your issue of January 8th (p. 56) an account by Dr. Lodge of an ambidextrous method of performing tonsillectomy, though a little befogged by the various anatomical movements described. Many years ago it occurred to me that ambidexterity in tonsillectomy would be a great advantage in securing without change of position the second tonsil, which so quickly becomes obscured by blood, and consequently I set about practising it. The steps of the operation are as follows.

Doyen's gag is introduced slightly to the left of the middle line and ethyl chloride administered. The operator stands on the patient's right, the nurse on the left, and the anaesthetist in the usual position at the head of the table. The nurse holds two adenoid curettes (Sir St. Clair Thomson's for preference), one in each hand, with the blades uppermost. I invariably use artificial light as it makes one independent of dull days and inadequately lighted rooms.

If the operation is performed in an institution the head of the table is slightly raised, the sliding electric lamp pulled down

by the anaesthetist, and the light reflected into the mouth from the ordinary forehead mirror worn by the operator. I have got into the habit of removing the left tonsil first, therefore I take the guillotine (Jenkins's guillotine for choice, the blade of which can be blunted on sandstone) in the left hand, depress the tongue with the index finger of the disengaged hand, and completely expose the tonsil to be enucleated. The ring of the guillotine is then passed over the lower pole, the handle of the instrument brought right across to the opposite side and depressed, while the point is raised and pushed well behind the tonsil, which with the soft palate in front of it is pushed well forwards. The index finger is then released from the tongue and used to push the tonsil (which can be distinctly felt under the soft palate) through the ring of the instrument until the circumference of the latter can be felt all round; the blade is then driven home and with a slightly wriggling movement the tonsil is brought out entire.

The guillotine is next taken in the other hand and the procedure repeated on the other tonsil. The nurse then relieves the operator of the guillotine and places a curette in his hand (one usually suffices); it is passed into the mouth blade downwards until it reaches the pharynx; it is then rotated through 180 degrees and passed up behind the soft palate until it impinges on the posterior end of the septum; it is then pushed backwards and upwards, and finally levered downwards in one sweep, using the incisor teeth as a fulcrum, and the adenoid growth brought out in the cage.

In this way I have enucleated many thousands of tonsils, and during the past three years have been most ably assisted by my colleague, Dr. Macleod, senior medical officer, Hull Dispensary, who has anaesthetized some 3,000 patients for me without a hitch.

I wish it to be understood that I am not claiming anything new or original—the method of enucleating the tonsils described above will be recognized as that introduced by Whillis and Pybus some years ago, and is, I believe, in general use—I am simply giving my experience as to how, with a combination of artificial light, team work, and ambidexterity, the operation which has taken so long to describe can be performed in a few seconds.

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PULMONARY EMBOLISM FOLLOWING CHILDBIRTH.

THE following case, which occurred in 1925, may be of interest in connexion with the two cases reported in the *BRITISH MEDICAL JOURNAL* of November 6th, 1926 (p. 835).

A healthy woman, aged 27, gave birth to her third child after a perfectly normal labour and without any intervention. I was not present at the birth, but was sent for two hours later by the nurse. I found the patient complaining of faintness, with a livid face and anxious expression, laboured breathing of 40, and a pulse rate of 160. The placenta had been delivered normally soon after birth and there had been no abnormal loss of blood. The uterus was fully contracted. Examination of the heart revealed no bruits, but the sounds were greatly accentuated, the second in the pulmonary area being exceptionally loud and sharp. During the examination the heart rate increased rapidly to 200.

Various stimulants were given, such as intramuscular injections of camphor, ether, strychnine, and digitaline, but without effect.

The patient vomited once and then lapsed into unconsciousness, and died in less than fifteen minutes after my arrival.

No post-mortem examination was performed, but the only possible diagnosis seemed to be that of pulmonary embolism.

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OCULAR SYMPTOMS DURING CATAMENIA.

IN the issue of the *BRITISH MEDICAL JOURNAL* dated May 8th and 15th, 1926 (*Epitome*, para. 503), a case of retinal haemorrhage synchronous with onset of menstrual period is described. The patient subsequently developed scleritis and she proved to be tuberculous. In view of this it may be of interest to record the following case.

A married woman, aged 29, reported that her left eye regularly became sore two days before menstruation and cleared up two days after menstruation ceased. She was found to have mild episcleritis. A month's local treatment with 1 per cent. yellow mercuric oxide ointment and massage was not successful in preventing a recurrence of the phenomenon. On obtaining a history of acute rheumatism, regular doses of sodium salicylate (15 grains thrice daily) were administered by the mouth, with the result that the patient has not had a relapse for six months, although treatment was only continued for two months.

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